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Appl. No: 10/661,003

REMARKS

The last Office Action of March 24, 2005, has been carefully considered. Reconsideration of the instant application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-22 are pending in the application. Claims 1, 5, 13, 15, 19 and 22 have been amended. No claims have been canceled or added. Amendments to the specification and Fig. 7 have been made. No fee is due.

It is noted that the drawings are objected to under 37 CFR 1.84(p)(5) because of missing reference sign(s). A new drawing sheet is submitted and labeled "Replacement Sheet". The specification has been amended by deleting the reference to "S1T3" with reference to Fig. 6.

It is further noted that claims 2-8 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 3-9, 11-15, and 17-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 5,978,578 to Azarya et al. (hereinafter "Azarya") in view of U.S. published patent application No. 2004/0054829 to White et al. (hereinafter "White").

Claims 2, 10 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Azarya and White, and further in view of U.S. published patent application No. 2002/0141438 to Smith et al. (hereinafter "Smith").

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OBJECTION TO THE DRAWING

Applicant has amended Fig. 7 by changing the first occurrence of the label "SINo5" in the leftmost callout column (3rd from top) to "SINo4" in correspondence with the "Slot" designation. A new drawing Fig. 7 labeled "Replacement Sheet" is enclosed with this Response.

Withdrawal of the objection to the drawing is thus respectfully requested.

REJECTION UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Applicant has amended claim 1 to address the §112 rejection. This change is self-explanatory and cosmetic in nature and should not be considered as a narrowing amendment to trigger prosecution history estoppel.

Withdrawal of the rejection of the claims 2-8 under 35 U.S.C. §112, second paragraph is thus respectfully requested.

REJECTION UNDER 35 U.S.C. §103(a)

Applicant has amended claim 1 solely to provide proper antecedent basis for claims 2-8. Claims 15 and 22 have been amended to recite that the number of the data locations within a data message is adjustable. claims 5, 13, and 19 have been amended to recite that the sub-component represents an axis.

Claims 1, 9, 15, 21, and 22 are the independent claims in this application.

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Claim 1, as amended herein, recites an automation system for a machine-tool, a production machine or a robot, which includes at least two components connected via a data link, and at least two sub-components associatable with a component. A data message, which includes data for the components and a plurality of data locations, can be sent between the at least two components; wherein the number of the data locations within a data message is adjustable and each of the data locations is associatable with one of the sub-components.

Claim 9 recites a method for programming a data communication of an automation system, as recited in claim 1, with the steps of adjusting the number of the data locations of the data message for those components that have at least two sub-components, and associating each of the data locations with a respective one of the sub-components in one-to-one correspondence.

Claim 21 recites an engineering system for programming a data communication in an automation system. The automation system includes at least two components connected via a data link and exchanging a data message that includes data locations and data for a component. The programming operation includes the steps of adjusting the number of the data locations of the data message for those components that have at least two sub-components, and associating each of the data locations with a respective one of the sub-components in one-to-one correspondence.

The Office Action states that Azarya discloses that "the number of the data locations within a data message is adjustable and each of the data locations is associatable with one of the sub-components", as recited in claim 1, and cites as

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supporting his argument col. 18, lines 2-3 of Azarya. However, Azarya merely discloses that "Data is transmitted in variable length packets, with [which, ?] cut through routing and reverse flow control."

As admitted in the Office Action, Azarya does not disclose that each of the data locations is associatable with one of the sub-components. The examiner then cites White as disclosing this feature. However, White discussed in Para. [0004] a standard ModBus protocol wherein the ModBus frame includes an ID of a slave device. As described more clearly in the Web publication <http://www.modicon.com/techpubs/intr7.html> cited in Para. [0003] of White:

Controllers communicate using a master-slave technique, in which only one device (the master) can initiate transactions (queries). The other devices (the slaves) respond by supplying the requested data to the master, or by taking the action requested in the query. Typical master devices include host processors and programming panels. Typical slaves include programmable controllers.

The master can address individual slaves, or can initiate a broadcast message to all slaves. Slaves return a message (response) to queries that are addressed to them individually. Responses are not returned to broadcast queries from the master.

The Modbus protocol establishes the format for the master's query by placing into it the device (or broadcast) address, a function code defining the requested action, any data to be sent, and an error-checking field. The slave's response message is also constructed using Modbus protocol. It contains fields confirming the action taken, any data to be returned, and an error-checking field. If an error occurred in receipt of the message, or if the slave is unable to perform the requested action, the slave will construct an error message and send it as its response.

A close inspection of the ModBus protocol confirms that this protocol does not teach or suggest that "the number of the data locations within a data

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message is adjustable and each of the data locations is associatable with one of the sub-components", as recited in claims 1, 9, and 21.

The Smith reference also fails to disclose the features missing from Azarya and White and recited in claims 1, 9 and 21.

Accordingly, claims 1, 9 and 21 and claims 2-8 depending from claim 1, and claims 10-14 depending from claim 9 are patentable over the combination of Azarya, White and Smith at least for the reasons stated above.

Claim 15, as amended herein, recites a method for programming a data communication of an automation system, for a machine-tool, a production machine or a robot, the system including at least two components connected via a data link and exchanging a data message that includes data locations and data for a component. The method includes the steps of programming the automation system and the at least two components with an engineering system, associating two sub-components with at least one component, wherein the component or sub-component includes a predefined function, automatically composing the data message, and automatically associating a data location with one of the sub-components when the data message is automatically composed. The number of the data locations within a data message is adjustable.

Claim 22, as amended herein, recites an engineering system for programming a data communication in an automation system. The automation system includes at least two components connected via a data link and exchanging a data message that includes data locations and data for a component. The programming operation includes the steps of associating two

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sub-components with at least one component, said at least one component or sub-component including a predefined function, automatically composing the data message, and automatically associating a data location with one of the sub-components when the data message is automatically composed. The number of the data locations within a data message is adjustable.

The arguments given above with respect to claims 1, 9, and 21 also apply to amended claims 15 and 22, which now recite that the number of the data locations within a data message is adjustable. As explained above, this is not taught or suggested by Azarya, White, and Smith, taken either alone or in combination. Accordingly, claims 15 and 22 and claims 16-20 depending from claim 15 are patentable over the combination of Azarya, White and Smith at least for the reasons stated above.

Regarding the amended dependent claims 5, 13, and 19, neither Azarya nor any of the other references of record disclose that the sub-component is an axis. These claims are therefore patentable at least for this reason.

CITED REFERENCES

Applicant has also carefully scrutinized the further cited prior art and finds it without any relevance to the newly submitted claims. It is thus felt that no specific discussion thereof is necessary.

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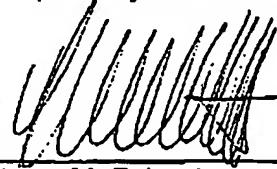
CONCLUSION

In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentably differentiated over the art and should be allowed.

Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

Respectfully submitted,

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